

### ABSTRACT OF THE DISCLOSURE

A photolithographic process forms patterns on  $\text{HgI}_2$  surfaces and defines metal sublimation masks and electrodes to substantially improve device performance by increasing the realizable design space. Techniques for smoothing  $\text{HgI}_2$  surfaces and for producing trenches in  $\text{HgI}_2$  are provided. A sublimation process is described which produces etched-trench devices with enhanced electron-transport-only behavior

5

Abstract of the Disclosure